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CEREAL CROP SITUATION IN BULGARIA

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Introduction

In the Kingdom of Bulgaria, in sharp contrast to the situation in Yugoslavia and Rumania, agricultural conditions have returned nearly to their pre-war normal, and the outlook for the future is very favorable. The production of the five chief cereals in 1921 was equal to the average production in 1907-12 in the same area, and there was a theoretical surplus of about 4,000,000 bushels of wheat and rye for export as compared with a maximum to be expected in the present area, of no more than 7,500,000 bushels. The crop of 1922 was lighter, owing to unfavorable weather conditions, but although there was little if any theoretical surplus, it was expected that about one million bushels would be exported. In the autumn of 1922 weather conditions were favorable in the most important wheat producing districts, and it is reported that the acreage sown to winter wheat for the crop of 1923 is greater than that for the crop of 1921, and the prospects are good for a total area under cereals greater than in any year since 1915.

The revised official figures for cereal production in Bulgaria, in 1921, together with the latest estimates for the crop of 1922 are shown in Table 1.

Table 1

Cereal Production in Bulgaria
1921 - 1922
Quantities in Weighed Bushels
(000 omitted.)

Cereal Crop	1921	1922
Wheat	31,893	27,925
Rye	6,693	7,204
"Double Rye"	4,447	4,181
Barley	9,094	9,324
Oats	9,301	9,370
Corn	24,172	19,802
Totals	85,600	77,806

Out of a total production of 43,000,000 bushels of bread cereals in 1921, the food requirements were estimated at 29,700,000 bushels and the seed requirements at 9,300,000 bushels, leaving a surplus for export of 4,000,000 bushels, of which 2,600,000 bushels were actually exported during the last six months of 1921.

Under normal conditions with the area of the country as at present, the production of bread cereals is not likely to exceed 47,000,000 bushels.

Areas Under Cereal Crops.

The conditions on which these estimates are based will be better understood by a more detailed analysis of the basic conditions affecting cereal production in Bulgaria, both before and after the World War.

The area of the present Kingdom of Bulgaria is 25,812,000 acres or 40,332 square miles, about the area of the State of Ohio. This area has varied greatly in the past ten years as a result of the various adjustments which have taken place following the Balkan Wars and the World War. In 1912 the area of the Old Kingdom was 37,198 square miles. In 1913 about 3000 square miles were ceded to Rumania, but additional territory was gained in the South. During the war a part of the territory ceded to Rumania was reoccupied, so that in 1917 and 1918 the area claimed by Bulgaria was about 47,000 square miles.

The published statistics of Bulgaria during this period of change include the total area occupied at the time of the report, and therefore the statistics for different years are not entirely comparable. However, taking into consideration only those districts which have remained a part of Bulgaria during the whole period, and which have neither lost nor gained in area, it is possible to give comparable data for the acreage of the chief cereal crops over a period of fifteen years, as shown in Table 2.

Table 2

Areas Seeded to Chief Cereals in Bulgaria[1]
for Specified Years.

Year	Acres (000 omitted)					Percent of Total Cereal Acreages				
	Wheat & Rye	Barley	Oats	Corn	Total	Wheat & Rye	Barley	Oats	Corn	Total 100%
1907	2,245	378	358	1,030	4,011	56.0	9.4	8.9	25.7	
1908	2,241	372	410	1,422	4,445	50.4	8.4	9.2	32.0	
1909	2,400	384	366	1,249	4,399	54.6	8.7	8.3	28.4	
1910	2,539	319	378	1,262	4,498	56.4	7.1	8.4	28.1	
1911	2,605	401	347	1,287	4,640	56.1	8.6	7.5	27.7	
1912	2,636	399	335	1,312	4,682	56.3	8.5	7.2	28.0	
Pre-War Average	2,444	376	366	1,260	4,446	55.0	8.4	8.2	28.3	
1913	2,631	426	318	1,276	4,651	56.6	9.2	6.8	27.4	
1914	2,592	445	346	1,273	4,656	55.7	9.6	7.4	27.3	
1915	2,516	463	332	1,316	4,627	54.4	10.0	7.2	28.4	
1916	2,497	446	311	1,189	4,443	56.2	10.0	7.0	26.8	
1917	2,251	377	266	1,077	3,971	56.7	9.5	6.7	27.1	
1918	2,189	358	256	1,135	3,938	55.6	9.1	6.5	28.8	
War Average	2,446	419	305	1,211	4,381	55.8	9.6	7.0	27.7	
1919	2,195	381	231	1,219	4,026	54.5	9.5	5.7	30.3	
1920	2,331	435	286	1,192	4,244	54.9	10.2	6.7	28.1	
1921	2,511	429	345	1,203	4,488	55.9	9.6	7.7	26.8	
Post-War Average	2,346	415	287	1,205	4,253	55.2	9.8	6.7	28.3	

(1) The areas in this table are the total areas seeded to the chief cereals in nine out of the twelve districts, and in fifty-two out of the sixty-six counties, which remained as parts of Bulgaria during the whole war period. It does not include in any year any of the territory ceded to or acquired from Turkey, Greece, Serbia, or Rumania, during the fifteen year period.

It will be noted from the table that while there was a decrease in the total production of cereals particularly in 1917 and 1918 and 1919, the relative proportions of the areas seeded to the different cereals remained practically constant throughout the whole period. In Yugoslavia, Hungary and Rumania there have been relative decreases in the production of the bread cereals, wheat and rye. But in Bulgaria there has been no such change. The reason for this is that in Bulgaria the peasant produces wheat and rye for his own consumption, whereas in the countries to the north and northwest the peasants are to a large extent corn eaters, and wheat was produced before the war largely for export, or as a cash crop. The amount of wheat and rye consumed as food in Bulgaria is equivalent to the total cereal diet, or 8.67 bushels per capita per year, for 70.1 per cent of the population. The corn consumed is equivalent to the total cereal diet of 27.1 per cent of the population and the remaining 2.8 per cent represents the consumption of barley and oats as human food.(1) This is just the reverse of conditions in Rumania where wheat and rye are consumed to an amount equivalent

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(1) The food ration of the Bulgarians varies greatly in different parts of the country. The able chief of the Bulgarian Statistical Service, Dr. Kiril Popoff, has made a special study of the food consumption in Bulgaria, which shows, for example, that in Samkov, 90 per cent of the population eat only rye, 5 per cent eat wheat and rye and 5 per cent eat wheat and corn. In Kazaulak the cereal consumption is 45 per cent wheat, 25 per cent corn, 25 per cent rye and 5 per cent barley. In northwest Bulgaria where the population is largely Rumanian, we find, in the district of Lom that the cereal consumption is 70 per cent corn, 10 per cent wheat and 20 per cent mixed corn and wheat. Dr. Popoff has worked out the ration in this way for each district in the Kingdom.

to the total cereal diet, or 15.23 bushels per capita per year, by only 22.1 per cent of the population, while the corn consumed is equivalent to the total diet of 77.9 per cent of the population. In Bulgaria the people are in the habit of seeding a certain proportion of their land to wheat and rye for their own food supply, and the export wheat and rye is only the surplus which exists in good years over the food and seed requirements. The Rumanians, on the other hand, seed a certain proportion of their lands to corn for food, and the seeding of wheat, the cash crop, depends largely upon marketing and export conditions.

Surplus and Deficit Areas.

Under normal conditions the export wheat in Bulgaria comes largely from a well defined region along the Danube river, and also from small areas about the Black Sea ports of Varna and Bourgas. In other parts of the Kingdom the areas of surplus and deficit are rather evenly balanced and any surplus in one district is absorbed by a neighboring deficit district. Wheat and rye are produced to some extent in every part of Bulgaria, but the mountainous country in the center and southwest of the Kingdom is a deficit area. In the mountain districts the population engages chiefly in fruit growing, wine making, sheep and cattle raising, and to a minor extent in manufacturing.

Sofia, the capital city, is located in a valley which produces a surplus slightly above the needs of the rural population but not enough to supply the city itself. The "New Territory" acquired from Turkey is entirely a wheat deficit area, and consequently considerable

quantities of wheat which formerly figured as exports to Turkey, will now be classed as internal trade.

The greatest surplus area is in the North, along the Danube River, opposite the great wheat producing districts of Rumania. Some of the surplus from this area is shipped by rail south to the mountain districts and to the cities. The export grain is shipped on barges either up the Danube to Central Europe or down the river to Galatz in Rumania where it is reshipped to Western Europe. The territory lost to Rumania in 1913 was a rich wheat producing area, and this loss diminishes the potential exporting power of Bulgaria by about 3 million bushels. Also in adjusting the western boundary, parts of cereal surplus districts were lost to Yugoslavia. Thus with the changes which have taken place in the boundaries of the Kingdom by the loss of surplus areas and the annexation of deficit areas, Bulgaria cannot be expected to regain its pre-war volume of cereal exports.

During the war the agriculture of Bulgaria was placed under the direction of so-called "Military agronoms", whose duties consisted in mobilizing every resource of man and animal power and machinery, to maintain food production at the highest possible level. In most other countries the agriculture was demoralized by the calling of too large a proportion of the man-power into military service. The result of this sustained effort to maintain the food supply is seen in Table 2 which shows only a slight drop in cereal production, and this not until near the close of the war. In 1921 the areas of surplus and deficit were larger than in pre-war years, owing to the fact that it was an unusually poor

crop year, but the great areas of surplus are still in the north and east, and there is no reason to believe that in a good crop year the ratio between production and consumption in any district will be materially different than before the war, except possibly in the extreme southeast where the city population has been greatly increased by the influx of large numbers of Russian refugees.

Land Reform in Bulgaria.

As in the other Balkan countries, the large estates in Bulgaria were divided among the peasants after the war, by an act made effective in November 1921, but in contrast to the situation in Rumania, this change in land ownership did not materially affect agricultural conditions. In the first place there were only 390 large estates in Bulgaria as compared with 3420 in the original area of Rumania. These estates comprised only 392,000 acres of cultivated land as compared with 4,154,000 acres in Rumania. On the other hand in Bulgaria 799,000 peasants even before the land reform, owned 9,302,000 acres of land while in Rumania 1,130,000 peasants owned only 10,278,000 acres. Thus in Bulgaria the estates were fewer in number and smaller, and the peasants holdings were in proportion to population more numerous and larger in size. The large estates in Bulgaria also differed in character from those in the other parts of the Danube Basin. They were of recent origin, the greater part of them dating only from 1879 when the country was freed from Turkey, and consisted of scattered small farms instead of large centralized units as in Rumania or Russia, where an estate might consist of as high as 125,000 acres in a single tract of land. These small estate farms were usually

operated by the peasants on shares, so the land reform will consist only in a change of ownership, with continued operation by the peasant owner of the same land which he formerly worked on shares. There are many individual exceptions to this general statement of conditions, but the statement covers the situation in most districts of the country. So while in Rumania the land reform was revolutionary in its effects on agriculture and has almost eliminated the exportable wheat surplus, in Bulgaria very little change in agricultural conditions is expected as a result of the changes in land tenure.

The maximum amount of land which can be held by any one individual under the new laws is 75 acres of cultivated land, 50 acres of meadow land and 50 acres of woodland. In the mountain districts one owner may have 125 acres of woods and meadow. Those who do not actually work the land themselves cannot own more than 25 acres, each member of the family being allowed 2-1/2 acres. The lands thus held by the peasants cannot be sold by him until after twenty years. If after three years the peasant has not shown himself to be a competent farmer, he is to be dispossessed. The land must be purchased for cash, thus eliminating shiftless would-be owners, as only those who have money or who can arrange for credit with a bank, can purchase land under the reform act. It is estimated that about one million acres will be affected by this law, but this is only four per cent of the arable land of Bulgaria, while in Rumania about 30 per cent of the arable land changed owners in 1920 and 1921.

Effects of Land Reform on Cereal Acreage.

It is, however, impossible to state positively just what effect the changed ownership will have upon the productivity of these one million acres. In some districts certain of the large estates were left uncultivated in the autumn of 1921 and were not plowed during 1922 pending their division and the apportionment of the fields to be retained by the former owner and those to be sold. It was also very dry in the autumn of 1921, so that in some districts the area usually seeded to winter cereals was greatly diminished. In 1922 there was a shrinkage in the area under wheat, rye, and oats, which was partly compensated by an increased seeding of corn and barley. However, it is impossible to state the degree to which these changes were influenced by the land reform. Table 3, which, though official, is tentative, shows the differences between the seedings of 1921 and those of 1922.

Table 3.

Areas seeded to Chief Cereal Crops,
Bulgaria 1921 - 1922.

Cereal Crop	1921		1922	
	Acres	Per cent	Acres	Per cent
	(000 omitted)		(000 omitted)	
Wheat	2,361	42.9	1,930	37.4
Rye	489	8.9	482	9.3
"Double Rye"	277	5.0	274	5.3
Bread Cereals ...		56.8		52.0
Barley	551	10.0	554	10.7
Oats	407	7.4	366	7.1
Corn	1,418	25.8	1,552	30.1
Totals	5,503	100.00	5,158	100.0

The agriculture of Bulgaria is essentially a peasant agriculture and the conservative peasant is likely to maintain the same relative proportions among the various crops to which he has become accustomed. There is however a tendency which is encouraged by the Government "agronoms" toward an increase in the numbers of live stock. This tendency may in the future reduce somewhat the area which can be seeded to cereals.

Cereal Exports

During the twenty-five year period before the war there was a tendency toward a decrease in the exportation of wheat and a definite increase in the exportation of other cereals as shown by Table 4.

Table 4

Cereal Exports of Bulgaria
Yearly averages for specified periods.
Quantities in Weighed Bushels
(000 omitted)

	1886-1895	1896-1905	1906-1910
Wheat	10,801	11,008	8,224
Rye	1,618	1,374	1,656
Bread Cereals	12,419	12,382	9,880
Barley	1,169	2,245	1,975
Oats	363	1,276	1,165
Corn	4,253	5,681	6,019
Millet	22	179	182

This decrease in the surplus of wheat for export has been accompanied at least during the latter part of the period, by an increase in the area seeded to wheat as shown by Table 2. This shows that the decrease in exportation has been due to an increase in the domestic consumption.

Before the war the exports of cereals, as before noted were largely from the northern surplus area along the Danube River and from the southeast near the Black Sea ports. In "La Bulgarie Economique", Dr. Kiril G. Popoff gives the following additional data in regard to the exports of cereals from the four main geographical divisions of Bulgaria.

Table 5

Cereal Exports of Bulgaria
By Geographical Regions, Averages 1897-99 and 1903-10.
Quantities in Weighed Bushels, (000 omitted).

Cereal	North	South	Northwest	Southwest
Wheat	5,011	3,791	1,594	25
Rye	1,004	284	344	1
Barley	1,373	259	626	1
Oats	816	383	32	4
Corn	3,789	485	1,836	75

The Northwest and Southwest regions were not greatly modified either by the Balkan War or by the World War, but as a result of the Balkan War the Northern region lost five rich wheat surplus districts to Rumania. These districts formerly produced more than half the surplus exportable from North Bulgaria, so that this region, as at present constituted, cannot be expected to export more than 2,500,000 to 3,000,000 bushels of wheat and rye. In future the exports from the North, and Northwest regions will pass largely through the port of Varna on the Black Sea.

The new Territories to the south, having a population of 351,000 will draw upon the surplus areas of South Bulgaria for about 1,200,000 bushels of wheat and rye, which formerly counted as exports from this

region, but which will now be classed as internal trade. This cuts the possible exportation from South Bulgaria to about 2.8 bushels. Thus before examining the present export situation, we may make a rough estimate of the pre-war exporting strength of the territory now comprised within the boundaries of Bulgaria, as follows: North Bulgaria 2,800,000 bushels, South Bulgaria 2,800,000 bushels, Northwest Bulgaria 2,000,000 bushels, Southwest Bulgaria 25,000 bushels, making a total of 7,625,000 bushels of wheat and rye which would be available for export from these regions as at present constituted under pre-war conditions. But, as we have seen, there has been a tendency to increase the domestic consumption at the expense of exports, and also a tendency to increase the production of oats, barley, corn and millet and to increase the numbers of live stock at the expense of the area under wheat. It is very doubtful therefore if post-war Bulgaria can even under normal conditions export as much as 7,500,000 bushels of wheat and rye.

Post-War Wheat and Rye Balances.

The present wheat and rye food requirement of the Kingdom of Bulgaria is estimated at 29,678,000 bushels. The present population is 4,882,439, of whom 70.1 per cent consume approximately 8.67 bushels of wheat and rye per capita per year. Seed requirements vary with the area seeded. Table 6 gives roughly the bread cereal balance for the years 1918, 1919, 1920, and 1921.

Table 6.

WHEAT AND RYE BALANCE IN BULGARIA
For Specified Years.

Quantities in Bushels. (000 omitted)

Year	Acres Seeded (000 omitted)	Yield	Seed Requirements	Net Yield	Food Requirements	Surplus or Deficit	Exports or Imports
1918	3,163	29,865	9,407	20,458	29,674	-9,216	Im. 1,404
1919	2,735	38,737	8,134	30,603	29,674	+ 929	Im. 17
1920	2,884	39,055	8,576	30,479	29,674	+ 805	Ex. 2,015(1)
1921	3,127	43,033	9,303	33,730	29,674	+4,056	Ex. 2,579(2)

(1) Exports July 1, 1920 - June 30, 1921.
(2) Exports July 1, 1921 - December 31, 1921.

This table illustrates a generalization which may be made in regard to all the grain exporting Danube States. In times of shortage the statistical deficit of the country is never balanced, in other words the imports never equal the theoretical deficit. The peasants go on short rations or resort to substitutes for their usual food supply. Only the needs of the cities are considered, and these only to the extent necessary to avoid troubles originating in hunger. The city populations must be fed to prevent riots and possible revolutions. In times of surplus production following a period of food shortage the peasants hold their grain, either for their own use or for better prices. Then in the second year of surplus there is an exportation in excess of the theoretical amount available for export in that year. It is always possible, in districts whose trade is organized for export to continue shipping abroad when there is an actual statistical deficit in the country as a whole. This was true in 1921 and 1922 in the Voivodina district of Yugoslavia

which continued to export grain to Budapest and Vienna in the face of a serious grain shortage in Yugoslavia as a whole. It is thus impossible accurately to calculate the probable exports, even when the yield is known.

Of the exports in the last half of 1921, 1,643,000 bushels were exported as grain and 602,000 bushels as flour (12,284 metric tons of flour). The exports of rye amounted to 334,000 bushels, barley 640,000 bushels and corn 1,499,000 bushels.

Cereal Situation in 1922.

As has been already noted, the autumn of 1921 was unfavorable for seeding winter grain, and the areas under wheat and rye were greatly reduced below those of the preceding year. In the summer of 1922 a severe drought seriously damaged the spring grain crops, so that according to the estimates of the Department of Agriculture at Sofia the total exports of all cereals from the 1922 crop were not likely to exceed 165,000 short tons.

The estimates for the 1922 crop have already been given in Table 1. These estimates have been revised downward from the official estimates of the Department of Agriculture at Sofia, after a special trip through the cereal producing regions and consultations with the agronoms in charge of the crop reporting work.

Allowing the same seed and food requirements as were deducted from the crop of 1921, there would be little or no surplus for export, but since some surplus districts are normally organized for export rather than for the supplying of the domestic market it is probable that about

one million bushels will be exported at the expense of the normal domestic consumption as food and seed.

In Southwest Bulgaria the summer of 1922 was dry and the autumn seeding is proceeding slowly, but in the south, north, and northwest regions, the surplus producing regions, conditions for preparing the seed bed have been favorable, and winter grain is being sown at the normal rate or better. There is every prospect for a heavier seeding of wheat and rye than for the crop of 1921, and with the completion of the adjustment of the land tenure system, it is probable that the total area under cereals will be larger than in any year since the beginning of the world war.